

In the Claims

1. (Currently amended) A hollow fiber membrane module for use in filtration, diafiltration, or dialysis methods, comprising:

at least one housing, each said housing including:

an inner generally cylindrical space defined by a first outer dimension

a surrounding packing space extending around said inner space

and defined between said first outer dimension and a second outer dimension greater than said first outer dimension, and

an outer structure surrounding said packing space and having said second outer dimension, said outer structure having at least one open area therein through which liquid can travel into said packing space,

at least two hollow fiber membrane bundles arranged parallel to one another in the packing space, each hollow fiber membrane bundle including a plurality of tubular hollow fiber membranes, wherein a volumetric ratio of all the hollow fiber membranes arranged in the packing space to the packing space inside the module is less than 10%, and

at least one segmentation element fitted on a surface of the housing and extending into the packing space in a generally radial direction of the housing for separating at least two said hollow fiber membrane bundles from one another, each segmentation element having at least one opening therein through which liquid can travel.

2. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, in ~~which~~ wherein the housing has a cylindrical shape.

3. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, in ~~which~~ wherein the outer structure of the housing includes a lateral surface provided with openings defining said at least one open area.

4. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 3, in ~~which~~ wherein the openings projected onto a plane are shapes selected from squares, rectangles and circles.

5. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 3, in ~~which~~ wherein each of the openings in the lateral surface have dimensions of 3 to 20 mm.

6. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 3, in ~~which~~ wherein the ratio of the total surface area of the openings in the lateral surface to the total surface area of the housing lateral surface is approximately 0.2 to approximately 0.9.

7. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in~~ ~~which~~ wherein the hollow fiber membranes comprise at least one material selected from the group consisting of a ceramic materials and a polymeric materials.

8. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 7, ~~in~~ ~~which~~ wherein the hollow fiber membranes have a support structure, and the hollow fiber membrane and including the support structure together have a thickness of approximately 5 μm to approximately 300 μm .

9. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 7, ~~in~~ ~~which~~ wherein each of the hollow fiber membranes has an inside diameter of up to 2 mm.

10. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the hollow fiber membranes are arranged in the module in the form of at least one bundle having potted ends.

11. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 10, ~~in which~~ wherein the hollow fibers are rolled up as bundles in the form of mats, ~~with a wide fiber spacing, and the fibers being brought to~~ at a spacing adapted to the packing density in the region of ~~pottings thereof~~ potted ends by the wrapping of with conventional spacer materials.

12. (Canceled)

13. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the at least one segmentation element comprises a frame part that contains the ~~having~~ at least one ~~said~~ opening therein ~~which~~ that defines a free passage surface surrounded by the frame part.

14. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 13, ~~in which~~ wherein the free passage surface of the frame part is subdivided by stabilization elements.

15. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 14, ~~in which~~ wherein the total surface area of the stabilization elements to the free passage surface surrounded by the frame part is in the range of approximately 2% to approximately 20%.

16. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 13, ~~in which~~ wherein the at least one segmentation element is fitted on an inner surface of the housing and an interior of said housing is subdivided into compartments.

17. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the at least one segmentation element is fitted on an outer surface of the housing and subdivides a space located over the outer surface of the lateral surface into compartments.

18. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 17, ~~in which~~ wherein the housing with the at least one segmentation element fitted on the outer surface of the lateral surface is accommodated in a second cage-like housing.

19. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the length of at least one segmentation element corresponds to the length of the housing.

20. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the at least one segmentation element is shorter than the housing and is distributed over the length of the housing with appropriate axial interspaces, no further segmentation element being arranged inside these axial interspaces over the full azimuth angle inside the housing.

21. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein the at least one segmentation element is as long as pottings provided

at ends thereof and are arranged at an end of the housing such that the pottings are segmented.

22. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 16, ~~in which~~ wherein hollow fiber membranes are arranged in at least one compartment produced by at least two segmentation elements.

23. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 22, ~~in which~~ wherein the hollow fiber membranes arranged in at least one compartment are fixed on at least one segmentation element.

24. (Canceled)

25. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, which further comprises a housing connection for feeding a liquid into the fiber interior of the hollow fiber membranes and a housing connection for withdrawing a liquid from the fiber interior.

26. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, ~~in which~~ wherein all constituents are produced from a material capable of being sterilized with water vapor at 121°C.

27-41. (Canceled)

42. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 9, wherein the hollow fiber membranes have an inside diameter of from about 0.15 mm to about 0.8 mm.

43. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 11, wherein the bundles comprise less than 10 fibers per centimeter.

44. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 17, ~~in which~~ wherein hollow fiber membranes are arranged in at least one compartment produced by at least two segmentation elements.

45-46. (Canceled)

47. (Currently amended) The hollow fiber membrane module ~~as claimed in~~ of claim 1, wherein the tubular hollow fiber membranes have ~~one of~~ either:

- a) the same diameter, ~~and~~ or
- b) different diameters.